

Lloyd WOLFINBARGER  
Appln. No. 08/646,520

Please cancel claims 1-9 and 19-27, without prejudice or disclaimer, and add new claims 28-49, set forth below.

28. A method for producing an essentially intact bone graft suitable for transplantation into a human, comprising:

inducing a negative pressure mediated flow of a first volume of a first solvent, said first solvent comprising one or more detergents, through said essentially intact bone graft, and

inducing a negative pressure mediated flow of a second volume of said first solvent through said essentially intact bone graft wherein said second volume of said first solvent is recirculated through said essentially intact bone graft.

29. A method for producing an essentially intact bone graft suitable for transplantation into a human, comprising:

inducing a negative pressure mediated flow of a first volume of a first solvent, said first solvent comprising one or more detergents, through said essentially intact bone graft;

inducing a negative pressure mediated flow of a second volume of said first solvent through said essentially intact bone graft wherein said second volume of said first solvent is recirculated through said essentially intact bone graft, and

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inducing a negative pressure mediated flow of a second solvent, said second solvent comprising a decontaminating agent, through said essentially intact bone graft to produce a decontaminated intact bone graft.

~~27~~ 7      ~~16~~ 6  
30. The method of claim ~~29~~, wherein a first volume of said second solvent is drawn through said essentially intact bone graft and is collected as waste.

~~18~~ 8      ~~17~~ 7  
31. The method of claim ~~30~~, further comprising:  
inducing a negative pressure mediated flow of a second volume of said second solvent through said decontaminated intact bone graft, wherein said second volume of said second solvent is recirculated through said essentially intact bone graft.

~~19~~ 10  
32. A method for removing bone marrow from an essentially intact bone graft, comprising:  
inducing a pressure mediated flow of solvent through said essentially intact bone graft, wherein said pressure mediated flow is carried out for a time effective to remove said bone marrow from said essentially intact bone graft, and  
sonicating said essentially intact bone graft in an ultrasonic cleaner, wherein said inducing is carried out simultaneously with said sonicating.

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30 11

33. The method of claim 32, wherein said flow of solvent is mediated at a positive pressure of 1 atmosphere or greater.

21 19

34. The method of claim 32, wherein said flow of solvent is mediated at a negative pressure below 1 atmosphere.

29 25 13

35. A method for reducing an initial quantity of viral particles and bacterial particles present in an essentially intact bone graft, comprising:

inducing a pressure mediated flow of solvent through said essentially intact bone graft to produce a cleaned bone graft, and

sonicating said essentially intact bone graft in an ultrasonic cleaner, wherein said inducing is carried out simultaneously with said sonicating, and wherein a quantity of viral and bacterial particles present in said cleaned bone graft is less than said initial quantity of viral particles and bacterial particles.

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36. A method for producing an essentially intact bone graft suitable for transplantation into a human, comprising:

inducing a negative pressure mediated flow of a first volume of a first solvent, said first solvent comprising one or more detergents, through said essentially intact bone graft, and

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sonicating said essentially intact bone graft in an ultrasonic cleaner, wherein said inducing is carried out simultaneously with said sonicating, wherein said negative pressure mediated flow and said sonicating are carried out for a time effective to produce a cleaned bone graft essentially free from bone marrow.

<sup>2</sup>  
~~37~~. The method of claim ~~36~~<sup>1</sup>, wherein a first volume of said first solvent is drawn through said essentially intact bone graft and is collected as waste.

*A*  
<sup>3</sup>  
~~38~~. The method of claim ~~37~~<sup>2</sup>, further comprising:

inducing a negative pressure mediated flow of a second volume of said first solvent through said essentially intact bone graft, wherein said second volume of said first solvent is recirculated through said essentially intact bone graft.

<sup>4</sup>  
~~39~~. The method of claim ~~38~~<sup>3</sup>, further comprising:

inducing a negative pressure mediated flow of a second solvent, said second solvent comprising a decontaminating agent, through said essentially intact bone graft to produce a decontaminated intact bone graft.

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<sup>5</sup>  
~~40~~. The method of claim <sup>4</sup>~~39~~, wherein a first volume of said second solvent is drawn through said essentially intact bone graft and is collected as waste.

~~41~~. The method of claim <sup>5</sup>~~40~~, further comprising:  
inducing a negative pressure mediated flow of a second volume of said second solvent through said decontaminated intact bone graft, wherein said second volume of said second solvent is recirculated through said decontaminated intact bone graft.

*a*  
~~42~~. An essentially intact bone graft suitable for transplantation into a human, produced by the process as claimed in <sup>10 15</sup>~~any one~~ of claims <sup>13</sup>~~32, 35, 36, 38, or 41~~. <sup>12</sup>

*c*  
~~43~~. The method of <sup>13</sup>~~any one~~ of claims <sup>10 15</sup>~~32, 35, 36, 38, or 41~~, wherein said ultrasonic cleaner is operated in a range of from 40KHz to 47KHz. <sup>12</sup>

~~44~~. An essentially intact bone graft suitable for implantation into a human produced by the process as claimed in claim <sup>13</sup>~~43~~. <sup>12</sup>

<sup>20 26</sup>  
~~45~~. An essentially intact bone graft suitable for transplantation into a human produced by

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*C*  
the process as claimed in <sup>any one</sup> ~~any one~~ of claims 28, <sup>6 7 8</sup> ~~29~~, 30, or 31.

*BC*  
46. The method of <sup>any one</sup> ~~any one~~ of claims 28, <sup>7 8</sup> ~~29~~, 30, 31, <sup>11 18 2 5</sup> ~~37~~, or 40, wherein said waste is collected in an essentially closed system.

*A*  
<sup>16</sup> ~~22~~  
47. A method for removing bone marrow from an essentially intact bone graft, comprising:  
inducing a negative pressure mediated flow of solvent through said essentially intact bone graft, wherein said negative pressure mediated flow is carried out for a time effective to remove said bone marrow from said essentially intact bone graft.

<sup>17</sup> ~~27~~ <sup>16</sup> ~~22~~  
48. The method of claim 47, wherein said negative pressure mediated flow is induced, and effluent solvent solubilized bone marrow is collected, in an essentially closed system.

<sup>18</sup> ~~31~~  
49. A method for reducing an initial quantity of viral particles and bacterial particles present in an essentially intact bone graft, comprising:

inducing a negative pressure mediated flow of solvent through said essentially intact bone graft to produce a cleaned bone graft, wherein a quantity of viral and bacterial particles present in said cleaned bone graft is less than said initial quantity of viral particles and bacterial particles.--